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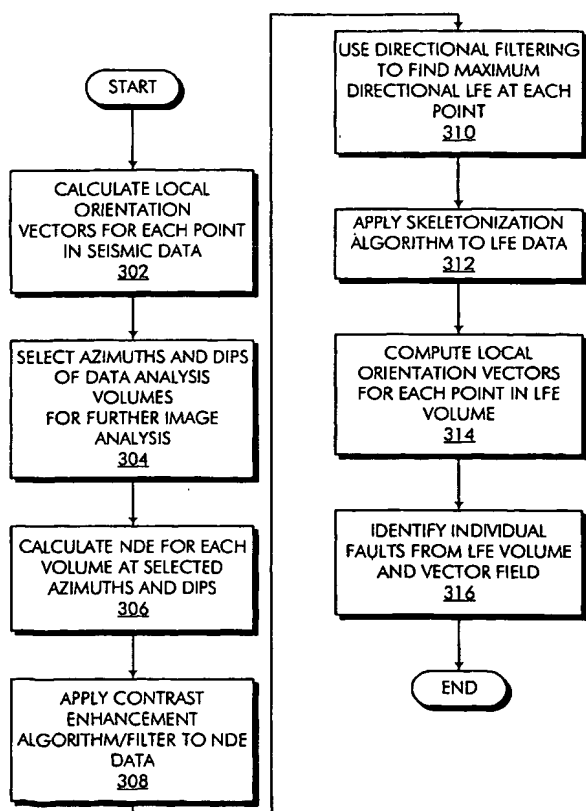
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#### Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR)

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR SEISMIC FEATURE EXTRACTION



(57) Abstract: A method and apparatus for seismic image processing is disclosed. A preferred embodiment aids in the identification of subterranean faults, which are significant in hydrocarbon exploration. The method includes steps of: a) reading a three dimensional seismic data volume; b) computing the three-dimensional orientation of the subsurface; c) subdividing the original volume into small data volumes that are rotated at a predetermined set of dips and azimuths related to those of the subsurface orientation; d) computing a 3-D edge detection measure on the small volumes formed in step c; e) performing a 3-D contrast enhancement operation in each of the small volumes; f) filtering the result of the contrast enhancement with selected 3-D filters at the predetermined set of dips and azimuths; g) skeletonizing the results of the filtering operation; h) separating the individual fault surfaces, and i) labelling the individual fault surfaces for further interpretation and exploration.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR)*
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# INTERNATIONAL SEARCH REPORT

national Application No  
PCT/US 03/36219

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G01V1/28

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC-7 G01V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, COMPENDEX, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WO 02/03099 A (EXXONMOBIL UPSTREAM RES CO) 10 January 2002 (2002-01-10) page 7, line 5 - line 25	1,30
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A	US 2002/116131 A1 (MEEK ROBERT A) 22 August 2002 (2002-08-22) paragraphs '0017!-'0020!	1,30
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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International Application No  
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Information on patent family members

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